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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/720,710	06/01/2001	Vanessa Z.H. Chan	M0925/7067	5662

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EXAMINER
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CHANG, VICTOR S

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 08/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/720,710

Applicant(s)

CHAN ET AL.

Examiner

Victor S. Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2005.  
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-148 is/are pending in the application.  
4a) Of the above claim(s) 2-22 and 25-148 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1, 23 and 24 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 29 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of Group I, claims 1, 17, 23 and 24 in the reply filed on 5/23/2005 is acknowledged. The traversal is on the ground(s) that "it is believed that a single search and examination covering all claims will not place undue burden on the Examiner". This is not found persuasive because Groups I-III are directed to different patentably distinct inventions (see Office action dated 4/22/2005, pages 2-3), as such clearly a single search and examination cannot not cover all claims, Applicants' argument to the contrary notwithstanding. Further, it is noted that claim 17 is dependent upon previously nonelected claim 2, as such claim 17 is now withdrawn as well.

The requirement is still deemed proper and is therefore made FINAL.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 23 and 24 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The composition of the polymeric article is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

Specifically, in claim 1, in the absence of composition, the property recitation “an inorganic species capable of forming a ceramic oxide, said inorganic species present in an amount of at least about 3 atomic% based on the total number of atoms in the first domain” is considered to be too broad and in excess of provided enablement in the specification, since the property recitation purports to cover any conceivable combination of ingredients either presently existing or which might be discovered in future and which would impart desired characteristics, but are unobvious to the instantly claimed invention, and the recitation also appears to read upon materials that could not possibly be used to form the contemplated genus or subgenus of articles. As a result, undue experimentation would be required to formulate suitable compositions for this claim or to determine what would or would not infringe. *Ex parte Slob* (PO BdApp) 157 USPQ 172.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1, 23 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In particular, in claim 1, the property recitation “an inorganic species capable of forming a ceramic oxide, said inorganic species present in an amount of at least about 3 atomic% based on the total number of atoms in the first domain” is vague, indefinite, functional, and fails to give notice as to what constitutes infringement upon the instantly claimed invention. It should be noted that claims merely setting forth physical

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characteristics desired in article, and not setting forth specific structure and/or compositions which would meet such characteristics, either in the claim or specification, are invalid as vague, indefinite, and functional, since it recites compounds by what it is desired that they do rather than what they are, and resulting in a claim scope that is indefinite since one of skill in the art is unable to determine without undue experimentation what compounds are included or excluded therefrom. As such, it is unclear as to what is the scope of the invention of which Applicant intends to claim. *Ex parte Slob* (PO BdApp) 157 USPQ 172.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. Claims 1, 23 and 24 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Lee et al. (Macromolecules, 22, pp.2602-2606).

Lee's paper describes porous membranes with controlled microstructures. Depending on architecture of the block copolymer and casting conditions, the microstructure of the porous membrane having uniform micropores can be formed by controlled morphology of the segregated microphase of narrow molecular weight distributions of the block lengths of the copolymer. The TEM and SEM observations of the block copolymer and the resulting porous membrane reveal that the periodic microstructures of the original block copolymer are directly reflected in the shape and size of the micropores (pp. 2602, Introduction). Lee shows an example self-assembled block copolymers of poly(isoprene) and poly(4-vinylphenyl)dimethyl-2-propoxysilane (pp. 2602-2603).

For claim 1, it is calculated that the atomic% of silicon atom in the terminal blocks of poly(4-vinylphenyl)dimethyl-2-propoxysilane is  $1/35 = 2.86$  atomic%, i.e., it is about 3 atomic% as claimed.

For claim 23, Lee discloses that glass transition temperature of the terminal silicon containing block is about 465°K, which is greater than 0°C (pp. 2603).

For claim 24, Lee discloses that the terminal silicon containing block has average degree of polymerization of 100 (pp. 2602-2603), or average molecular weight of 22,000, i.e., about 30,000 as claimed. Further, it should be noted that nowhere does Lee teach a maximum cap on the average molecular weight, and in fact Lee expressly

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teaches that depending on the architecture of the block copolymer, the shape and size micropores can be designed, as set forth above. As such, in the absence of evidence to the contrary, it is the Examiner's position that, depending on the designed micropore size requirement, a suitable average molecular weight of the terminal silicon containing block is either anticipated, or an obvious selection, as taught by Lee.

### ***Conclusion***


9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 5104952 to Babu discloses that ethenylarene having 8 to about 20 carbon atoms that can be polymerized by anionic polymerization methods. Examples include: 1-ethenyl-4-(trimethylsilyl)benzene, 1-ethenyl-4-(dimethyl-1-methylethoxysilyl)benzene, and 1-ethenyl-4-[N,N-bis(trimethylsilyl)amino]benzene, etc. (column 6, lines 9-29).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S. Chang whose telephone number is 571-272-1474. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel H. Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Victor S Chang  
Examiner  
Art Unit 1771

8/2/2005